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REMARKS/ARGUMENTS

Claims 1-11 are pending in this application.

Claims 1-11 were rejected under 35 U.S.C. § 102(b) as being anticipated by Usui (U.S. 4,763,236). Applicant respectfully traverses this rejection

Claim 1 recites:

"A DC-DC converter comprising:
a primary-side circuit for outputting energy of a primary coil of a transformer to a secondary coil side in accordance with an on/off operation of a switching element;
a secondary-side circuit for rectifying and smoothing a voltage output from the secondary coil of said transformer and for outputting a DC voltage;
an auxiliary power-supply circuit for rectifying and smoothing the voltage output from an auxiliary power-supply coil provided in said transformer;
a secondary-side control circuit for detecting the DC output voltage of said secondary-side circuit and for outputting a control signal;
a drive control circuit for outputting a pulse control signal for controlling the on/off operation of said switching element on the basis of the control signal output from said secondary-side control circuit;
an insulator for transmitting the control signal output from said secondary-side control circuit to said drive control circuit; and
a coupling device for superimposing, in an AC manner, the output of said auxiliary power-supply circuit onto the control signal transmitted to said drive control circuit; wherein
the output of said auxiliary power-supply circuit and said coupling device are directly connected to each other electrically." (emphasis added)

With the unique combination and arrangement of features recited in Applicant's claim 1, including the features of "a coupling device for superimposing, in an AC manner, the output of said auxiliary power-supply circuit onto the control signal transmitted to said drive control circuit" and "the output of said auxiliary power-supply circuit and said coupling device are directly connected to each other electrically," Applicant has been able to provide a DC-DC converter in which the level of the signal superimposed in an AC manner onto the output of an insulating element is large, and

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there are very few limitations in the aspects of circuit design, phase correction, starting characteristics, and short-circuit protection (see, for example, the first full paragraph on page 4 of the originally filed specification).

The Examiner alleged that Usui teaches all of the features recited in Applicant's claim 1 including "a DC-DC converter (1 and 3-4) including a primary side circuit, a switching element (figure 1, item 5[]), a secondary side circuit, rectifying and smoothing (figure 1, item 11), an auxiliary power supply (figure 1, item 14), detecting the DC output voltage (figure 1, item 20 and 21), a drive control circuit (column 4, lines 1-35), an insulator (figure 1, item 24), a coupling device (figure 1, item 17 and Abstract line[s] 1-15)[,] a plurality of diodes, a coil and capacitor (figure 1, items 7, 8, 9 and 10), a drive control (figure 1, item 19), a photo coupler (figure 1, item 23), flyback topology (column 4, line 5-15), a resistor (figure 1, item 18)." Applicant respectfully disagrees.

Contrary to the Examiner's allegations, the capacitor 17 of Usui does not perform the function of superimposing, in an AC manner, the output of the auxiliary power-supply circuit onto the control signal transmitted to said drive control circuit as recited in Applicant's claim 1. In contrast, the capacitor 17 of Usui is provided "to convert the FET 5 from the ON state into the OFF state" (see col. 3, lines 49-53 of Usui). In other words, the capacitor 17 of Usui provides a damping time constant for the FET 5. Thus, the capacitor 17 of Usui clearly cannot be fairly construed as "a coupling device for superimposing, in an AC manner, the output of said auxiliary power-supply circuit onto the control signal transmitted to said drive control circuit" as recited in Applicant's claim 1.

Even assuming *arguendo* that the capacitor 17 of Usui could be fairly construed as "a coupling device for superimposing, in an AC manner, the output of said auxiliary power-supply circuit onto the control signal transmitted to said drive control circuit" as recited in Applicant's claim 1, Usui still fails to teach or suggest each and every feature recited in Applicant's claim 1.

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Particularly, the capacitor 17 of Usui is specifically disclosed, in col. 3, lines 49-53 of Usui, as being "connected in parallel to the tertiary winding 14 through a third resistor 18" (emphasis added). Thus, even if the capacitor 17 of Usui could be fairly construed as "a coupling device for superimposing, in an AC manner, the output of said auxiliary power-supply circuit onto the control signal transmitted to said drive control circuit" as recited in Applicant's claim 1, Usui clearly fails to teach or suggest the feature of "the output of said auxiliary power-supply circuit and said coupling device are directly connected to each other electrically," because the capacitor 17 of Usui (which the Examiner alleged corresponds to the coupling device recited in Applicant's claim 1) is connected to the output of the tertiary winding 14 (which the Examiner alleged corresponds to the auxiliary power supply circuit recited in Applicant's claim 1) via a third resistor 18, and is clearly NOT directly connected to the auxiliary power supply circuit 14, as recited in Applicant's claim 1.

Accordingly, Applicant respectfully submits that Usui fails to teach or suggest the unique combination and arrangement of elements recited in Applicant's claim 1.

Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection of claim 1 under 35 U.S.C. § 102(b) as being anticipated by Usui.

In view of the foregoing amendments and remarks, Applicant respectfully submits that claim 1 is allowable. Claims 2-11 depend upon claim 1, and are therefore allowable for at least the reasons that claim 1 is allowable.

In view of the foregoing amendments and remarks, Applicant respectfully submits that this application is in condition for allowance. Favorable consideration and prompt allowance are solicited.

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The Commissioner is authorized to charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1353.

Respectfully submitted,

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Attorneys for Applicant

Joseph R. Keating
Registration No. 37,368

Christopher A. Bennett
Registration No. 46,710

KEATING & BENNETT LLP
10400 Eaton Place, Suite 312
Fairfax, VA 22030
Telephone: (703) 385-5200
Facsimile: (703) 385-5080